What is claimed is:

1. A method for forming a film by casting on a front surface of a moving substrate at least one polymer solution discharged from a casting die, said method comprising steps of:

heating said substrate with use of a heater disposed along a back surface of said substrate; and

condensing for recovery a solvent evaporated from said film with a condensing device disposed so as to closely confront to said film on said substrate.

2. A method as claimed in claim 1, wherein a wind speed near a surface of said film is from 0.01m/s to 0.5m/s.

3. A method as claimed in claim 2, wherein said substrate moves downwards at a casting position at which said flowing polymer solution contacts to said substrate.

4. A method as claimed in claim 1, wherein Tw is a surface temperature (°C) of a confronting surface of said condensing device to said film, Ts is a temperature (°C) of said film, and d is a distance (mm) from said condensing device to said film, a temperature gradient Q satisfies following formulae (1) and (2):

$$Q=(Ts-Tw)/d \quad \cdots\cdots(1)$$

$$5<Q<100 \quad \cdots\cdots(2)$$

5. A method as claimed in claim 4, wherein a fluctuation range of said temperature gradient Q is at most 10% of said temperature gradient Q.

6. A method as claimed in claim 5, wherein a fluctuation range of temperature on said confronting surface of said condensing device is at most 10°C.

7. A method as claimed in claim 6, wherein a fluctuation range of said distance d in widthwise direction of said substrate is at most 10% of an average of said distance d.

8. A method as claimed in claim 1, wherein the co-casting of said plural polymer solutions is made.

9. A method as claimed in claim 1, wherein a sequential casting of said plural polymer solutions is made.

10. A method as claimed in claim 1, wherein a thickness of said film is from 10μm to 1000μm just after formation of said film on said substrate, and a relative speed of said substrate to said casting die is from 5m/min to 200m/min.

11. A method as claimed in claim 10, wherein said polymer contained in said polymer solution is at least one of cellulose acylate, polycarbonate, aramide resin, polysulfone, and polystyrene.

12. A method as claimed in claim 11, wherein a polymer solution contains cellulose acylate of at least 50 vol.% of polymer components, X is a ratio of substitution of acylate group at 6^{th} position of repeating unit in cellulose acylate, and Y is a ratio of substitution of said acylate group at other positions, a following conditions are satisfied in said polymer solution:

$X>0.85$ and $2.70<(X+Y)<2.99$.

13. A method as claimed in claim 1, wherein said film is an optical film.

14. A method as claimed in claim 13, wherein said optical film is used in a polarizing filter.

15. A method as claimed in claim 13, wherein said optical film is used as a protective film for a polarizing filter.

16 A method as claimed in claim 13, wherein said optical film is used for an optical functional film.

17. A method as claimed in claim 13, wherein said optical film is used in a displaying device.

18. An apparatus for producing a film from a polymer solution comprising:

a movable substrate;

a casting die for casting a polymer solution onto a front surface of said moving substrate, so as to form a film;

a heater provided so as to confront to a rear surface of said substrate, said heater heating said film through said substrate;

a condensing device disposed so as to closely confront to said film, said condensing device condensing for recovery a solvent evaporated from said film.

19. An apparatus as claimed in claim 18, wherein Tw is a surface temperature (°C) of a confronting surface of said condensing device to said film, Ts is a temperature (°C) of

said film, and d is a distance (mm) from said condensing device to said film, a temperature gradient Q satisfies following formulae (1) and (2):

$$Q=(Ts-Tw)/d \quad \cdots\cdots(1)$$

$$5<Q<100 \quad \cdots\cdots(2)$$

20. An apparatus as claimed in claim 19, wherein a fluctuation of said temperature gradient Q is at most 10% of said temperature gradient Q.

21. An apparatus as claimed in claim 20, wherein a fluctuation range of temperature on said confronting surface of said condensing device is at most 10°C.

22. An apparatus as claimed in claim 21, wherein a fluctuation range of said distance d from said condensing device to said film is at most 10% of an average of said distance d in a widthwise direction of said substrate.

23. An apparatus as claimed in claim 22, wherein said substrate is a belt.

24. An apparatus as claimed in claim 22, wherein said substrate is a drum.

25. An optical polymer film comprising characteristics which satisfy following formulae:

$MD1 \leq 0.10 \times TA1$;

$SP1_{MAX} \leq 0.10 \times TA1$

wherein

TA1: an average of first thickness values measured at plural

measuring points arranged in a first direction on a surface of said polymer film

MD1: an average of deviations of said plural first thickness values,

$SP1_{MAX}$: a maximum of frequency spectrum SP1, which is obtained by Fast Fourier Transform of said first thickness values.

26. An optical polymer film as claimed in claim 25, wherein said maximum $SP1_{MAX}$ of said frequency spectrum SP1 in a range corresponding to wavelength by transforming into spatial frequency domain is at most 10% of said average TA1 of said first thickness value.

27. An optical polymer film as claimed in claim 25 or 26, comprising characteristics which satisfy following formulae:

$MD2 \leq 0.10 \times TA2$,

wherein

TA2: an average of second thickness values measured in perpendicular two optional directions;

MD2: an average of deviations of said second thickness values,

wherein a frequency spectrum SP2 is obtained by Fast Fourier Transform of said second thickness values, and a maximum $SP2_{MAX}$ of said frequency spectrum SP2 in a range corresponding to wavelength by transforming into spatial frequency domain is at most 10% of said average TA2 of said first thickness values.

28. An optical polymer film as claimed in claim 25, 26, or 27, comprising characteristics which satisfy following formulae:

$MD3 \leq 0.10 \times RA1$,

$SP3_{MAX} \leq 0.10 \times RA1$

wherein

MD3: an average of deviations of first retardation values Re in an in-plane direction, said first retardation values Re being measured in one optional direction,

RA1: an average of said first retardation values Re in said in-plane direction,

$SP3_{MAX}$: a maximum of frequency spectrum SP3, which is obtained by Fast Fourier Transform of said first retardation values Re.

29.An optical polymer film as claimed in claim 28, wherein said maximum $SP3_{MAX}$ of said frequency spectrum SP3 in a range corresponding to wavelength by transforming into spatial frequency domain is at most 10% of said average RA1 of said first retardation values Re.

30. An optical polymer film as claimed in claim 28 or 29, comprising characteristics which satisfy following formulae:

$MD4 \leq 0.10 \times RA2$,

wherein

MD4: an average of deviations of second retardation values Re measured in perpendicular two directions,

RA2: an average of said second retardation values Re measured in perpendicular two directions,

wherein a frequency spectrum SP4 is obtained by Fast Fourier Transform of said second retardation values Re measured in perpendicular two directions, and a maximum $SP4_{MAX}$ of said frequency spectrum SP4 in a range corresponding to wavelength by transforming into spatial frequency domain is at most 10$ of

said average RA2 of said second retardation values measured in perpendicular two directions.

31. An optical polymer film as claimed in claim 25, 26, 27, 28, 29 or 30, comprising characteristics which satisfy following formulae:

$MD5 \leq 0.10 \times RA3$,

$SP5_{MAX} \leq 0.10 \times RA3$

wherein

MD5: an average of deviations of third retardation values Rth in a thickness direction, said third retardation values Rth being measured in one optional direction,

RA3: an average of said third retardation values Rth,

$SP5_{MAX}$: a maximum of frequency spectrum SP3, which is obtained by Fast Fourier Transform of said third retardation values Rth.

32. An optical polymer film as claimed in claim 31, wherein said maximum $SP5_{MAX}$ of said frequency spectrum SP5 in a range corresponding to wavelength by transforming into spatial frequency domain is at most 10% of said average RA3 of said third retardation values Rth in thickness direction.

33. An optical polymer film as claimed in claim 31 or 32, comprising characteristics which satisfy following formulae:

$MD6 \leq 0.10 \times RA4$,

wherein

MD6: an average of deviations of said third retardation values Rth measured in perpendicular two directions,

RA4: an average of said fourth retardation values Rth,

wherein a frequency spectrum SP6 is obtained by Fast Fourier

Transform of said fourth retardation values Rth, and a maximum $SP6_{MAX}$ of said frequency spectrum SP6 in a range corresponding to wavelength by transforming into spatial frequency domain is at most 10$ of said average RA4 of said fourth retardation values Rth measured in perpendicular two directions.

34. An optical polymer film as claimed in claim 33, wherein surface resistance in 10% relative humidity is in the range of 1×10^{10} to 1×10^{13} and a difference of said surface resistance between optional two points is at most 20% of an average of said surface resistances of said two points.